

Example 10: If that 50. kg person was in a space shuttle orbiting at an altitude of 250 km, what would be her new potential energy, relative to infinity?

$$E_p = - \frac{GMm}{r}$$
$$= - \frac{6.67 \times 10^{-11} (5.98 \times 10^{24}) (50)}{[(6.38 \times 10^6) + (250\,000)]}$$

$$E_p = -3.0 \times 10^9 \text{ J}$$